

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-5, 9-11, and 13-22 are presently active in this case, Claims 1 and 11 having been amended, and Claim 12 having been canceled by way of the present Amendment.

Claims 12 and 15-17 were indicated as containing allowable subject matter. The Applicant notes that Claim 22 is dependent upon Claim 15, and therefore should also be considered allowable.

In the outstanding Official Action, Claims 1-4, 9, 11, and 19-22 were rejected under 35 U.S.C. 102(b) as being anticipated by Crowe (U.S. Patent No. 2,398,884). Claims 13, 14, 18, 19, and 21 were rejected under 35 U.S.C. 102(b) as being anticipated by Stadler (U.S. Patent No. 2,511,380). Claims 5 and 10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Crowe. For the reasons discussed below, the Applicant respectfully requests the withdrawal of the art rejections.

Claim 1 has been amended to incorporate the subject matter of allowable Claim 12 without the incorporation of intervening Claim 11. However, the Applicant submits that amended Claim 1 is allowable since the Crowe reference does not disclose or suggest a nozzle for a burner having a first tube that maintains a constant cross-sectional area over an entire length thereof, and a second tube that maintains a constant cross-sectional area over an entire length thereof. Accordingly, the Applicant requests the withdrawal of the rejection of Claim 1, and Claims 2-5, 9, and 10 that depend from Claim 1.

Claim 11 has been rewritten in independent form. Claim 11 recites a nozzle for a burner having a first tube that maintains a constant cross-sectional area over a substantial length thereof, and a second tube that maintains a constant cross-sectional area over a

substantial length thereof. The first tube and the second tube are defined as being separate along a substantial length of the body. The Applicant submits that the Crowe reference does not disclose or suggest all of the limitations recited in Claim 11.

The Crowe reference describes a gas torch having a gas supply pipe (6) that is connected to a vertical passage (5) in an elongated block tip (1). The vertical passage (5) is connected to a distributing chamber (4), which is connected to a row of passages (3) that lead to a row of discharge orifices (3'). The Crowe reference also describes gas supply pipes (12, 14) that are connected to respective vertical passages (11, 13). The vertical passages (11, 13) are connected to respective distributing chambers (9, 10), which are connected to respective rows of passages (7, 8) that lead to respective rows of discharge orifices (7', 8'). As is clear from Figures 2 and 3, the vertical passage (5) and distributing chamber (4) have a different cross-sectional area than passages (3). Similarly, the vertical passages (11, 13) and distributing chambers (9, 10) have different cross-sectional areas than respective passages (7, 8).

Claim 11 recites the first tube and the second tube as having inlets on a first end of the body and outlets on a second end of the body. The Official Action cites sections 12, 11, 9, and 7 as the first tube. However, Claim 11 recites that the first tube maintains a constant cross-sectional area over a substantial length thereof, with a similar limitation for the second tube. The Applicant notes that passage (7) extends over a third of the total length of the block tip (1). To the contrary, the specification describes an embodiment with an overlap between tubes, thereby providing different cross-sectional areas along the length of the tubes, that preferably “does not extend beyond ten percent of the overall length of the body 20.” (See page 6, line 24, of the specification.) The Applicant submits that the passages (7) extend over a third of the length of the block tip (1), and therefore the first tube (defined as sections 12,

11, 9, and 7 in the Official Action) do not have a constant cross-section over a substantial length of the body. Additionally, the Applicant notes that passages (3) do not have a constant cross-sectional area along the length thereof, but rather the passages (3) have a Venturi shape. (See Figures 2 and 3, and column 2, lines 38-43, of the Crowe reference.)

Claim 13 of the present application recites a nozzle for a burner including a body having a first end adapted to attach to the burner and a second end. The first end has a plurality of inlet holes and the second end has a plurality of outlet holes. Each inlet hole is connected to a single outlet hole by a separate tube, and all of the separate tubes in the body extend along a common plane. Claim 19 of the present application recites a nozzle for a burner including a body having a first end adapted to attach to the burner and a second end. The body has a plurality of separate tubes extending therethrough. The plurality of separate tubes each have an inlet hole on the first end and an outlet hole on the second end, and all of the plurality of separate tubes in the body extend along a common plane.

The Applicant submits that neither the Crowe reference nor the Stadler reference disclose or suggest a nozzle for a burner including a body having separate tubes where all of the separate tubes in the body extend along a common plane, as recited in Claims 13 and 19 of the present application. Accordingly, the Applicant submits that the Crowe and Stadler references do not anticipate Claims 13 and 19 of the present application.

With respect to the Crowe reference, the Official Action cites sections 12, 11, 9, and 7 as the first tube, and sections 6, 5, 4, and 3 as the second tube. However, passage (11) extends in a vertical direction at one end of the block tip (1) and the plurality of passages (7) extend at an inclined angle with respect to passage (11), as is clearly depicted in Figure 2. As is apparent from Figure 2, the passage (7) depicted therein is not in the same plane as passage (11) when the plane is defined as the plane along which the cross-section is taken, since

passage (11) is shown in hidden lines and the passage (7) is shown in solid lines.

Furthermore, since the passages (7) are inclined with respect to the vertical passage (11), then these passages are not in the same plane when the plane is defined as being perpendicular to the cross-section plane of Figure 2. In fact, there is no plane in which passage (7)(depicted in solid lines in Figure 2) and passage (11)(depicted in hidden lines) extend along in common. Accordingly, the Crowe reference does not disclose a nozzle for a burner including a body having separate tubes where all of the separate tubes in the body extend along a common plane, as recited in Claims 13 and 19 of the present application.

The Stadler reference describes a body (9) that has an array of wells (21) aligned in three rows and six columns. Each well (21) has a pair of oppositely inclined ducts (22 and 23) for supplying gaseous fuel to each well (21). Since the wells (21) are arranged in an array having both rows and columns as depicted in Figure 1, the Applicant submits that the all of the tubes of the Stadler reference do not extend along a common plane, as recited in Claims 13 and 19 of the present application. Additionally, ducts (22 and 23) do not all extend along a common plane, as is evident from Figure 1 and Figure 3 (one row of ducts 22 shown in solid lines and ducts 23 shown in hidden lines). Accordingly, the Stadler reference does not disclose a nozzle for a burner including a body having separate tubes where all of the separate tubes in the body extend along a common plane, as recited in Claims 13 and 19 of the present application.

Claims 14, 18, 20, and 22 are considered allowable for the reasons advanced for Claims 13 and 19 from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed, taught, nor suggested by the applied references when those features are considered within the context of Claims 13 and 19.

Claim 21 of the present application recites a nozzle for a burner that includes a body having a first end adapted to attach to the burner and a second end. The first end has a plurality of inlet holes and the second end has a plurality of outlet holes, where each inlet hole is connected to a single outlet hole by a separate tube. At least one of the separate tubes includes a first linear section connected to one of the inlet holes and a second linear section connected to one of the outlet holes, where the second linear section is provided at a predetermined angle in relation to the first linear section.

The Applicant submits that neither the Crowe reference nor the Stadler reference disclose a nozzle for a burner where each inlet hole is connected to a single outlet hole by a separate tube. Accordingly, the Applicant submits that the Crowe and Stadler references do not anticipate Claim 21 of the present application.

With respect to the Crowe reference, each inlet hole is not connected to a single outlet hole. The Crowe reference describes a configuration in which each vertical supply passage (6, 12, and 14) is connected to a respective distributing chamber (4, 9, and 10), which is connected to a plurality of respective discharge orifices (3', 7', and 8'). For example, vertical supply passage (12) is connected to a row of fifteen discharge orifices (7'). Accordingly, the Crowe reference does not disclose a nozzle for a burner where each inlet hole is connected to a single outlet hole by a separate tube, as recited in Claim 21 of the present application.

With respect to the Stadler reference, each inlet hole is not connected to an outlet hole by a separate tube. The Stadler reference describes a configuration in which each well (21) has a pair of oppositely inclined ducts (22 and 23) for supplying gaseous fuel to each well (21). Accordingly, each inlet to the ducts (22 and 23) is not connected to an outlet of the well (21) by a separate tube, but rather the ducts (22 and 23) join to share a common tube section (namely, well 21) that leads to an outlet of the body (9). Accordingly, the Stadler reference

does not disclose a nozzle for a burner where each inlet hole is connected to a single outlet hole by a separate tube, as recited in Claim 21 of the present application.

Accordingly, the Applicant respectfully requests the withdrawal of the art rejections.

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Respectfully submitted,

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Serial No: 09/618,030

Amendment Filed on: 6-26-02

IN THE CLAIMS

1. (Twice Amended) A nozzle for a burner, said nozzle comprising:
a body having a first end adapted to attach to the burner and a second end;
a first tube extending through said body, said first tube having a first inlet on said first end of said body and a first outlet on said second end of said body; and
a second tube extending through said body, said second tube having a second inlet on said first end of said body and a second outlet on said second end of said body,
wherein said first tube and said second tube are separate along a substantial length of said body, [and]
wherein said first tube includes a first linear section connected to said first inlet and a second linear section connected to said first outlet, said second linear section being provided at a predetermined angle in relation to said first linear section, and
wherein said first tube maintains a constant cross-sectional area over an entire length thereof, and wherein said second tube maintains a constant cross-sectional area over an entire length thereof.

11. (Once Amended) A [The] nozzle for a burner, [according to Claim 1] said nozzle comprising:
a body having a first end adapted to attach to the burner and a second end;
a first tube extending through said body, said first tube having a first inlet on said first end of said body and a first outlet on said second end of said body; and

a second tube extending through said body, said second tube having a second inlet on said first end of said body and a second outlet on said second end of said body,

wherein said first tube and said second tube are separate along a substantial length of said body,

wherein said first tube includes a first linear section connected to said first inlet and a second linear section connected to said first outlet, said second linear section being provided at a predetermined angle in relation to said first linear section, and

wherein said first tube maintains a constant cross-sectional area over a substantial length thereof, and wherein said second tube maintains a constant cross-sectional area over a substantial length thereof.

12. (Cancel)